

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-12 and 14-20 are pending in this application. Claims 1-8, 10-12 and 14 are amended, and claims 15-20 are newly added.

Applicant notes with appreciation the Examiner's indication that the priority documents have been acknowledged and received by the United States Patent and Trademark Office and that the references filed in the Information Disclosure Statement filed July 22, 2004 have been considered.

Applicant also notes with appreciation the Examiner's indication in the September 20, 2005 Office Action that the drawings have been accepted.

CLAIM REJECTIONS UNDER 35 U.S.C. § 112

Claims 1-7 stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention. In particular, the terms "slightly" and "each cylinder" in line 4 of claim 1 were identified as indefinite.

In response to the above rejections, the term "slightly" has been deleted from independent claim 1. Further, claim 1 has been amended to change the language "each cylinder" to the cylinder as suggested by the Examiner.

Accordingly, Applicant respectfully submits that the rejections under 35 U.S.C § 112, second paragraph are overcome and respectfully requests that rejections be withdrawn.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 1-6 and 8-14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Balke (U.S. Patent No. 1,437,954) in view of Orange (U.S. Patent No. 5,513,819) and Zuk et al. (U.S. Patent No. 5,791,590, herein Zuk). The Applicant respectfully traverses this rejection for at least the reasons detailed below.

All three of the independent claims are shown below with emphasis added to specific features to ensure the Examiner specifically address these features in the next Office Action since the Applicant will most likely file an Appeal if the prior art rejections are maintained.

1. A bobbin of plastic comprising:
a cylinder formed integrally with two circumferential end flanges
having a **one piece injection moulded U-shaped channel**,
wherein **the cylinder includes a plurality of cylinder elements each having a curved, radially inner surface forming a circumference of the cylinder**, and each end flange includes a plurality of spaced-apart, radial flange elements which are distributed along the circumference of the cylinder.

8. A method of manufacturing a bobbin of plastic comprising:
injection moulding a one piece U-shaped channel, the one piece U-shaped channel having a plurality of cylinder elements and two circumferential end flanges, **each of the plurality of cylinder elements has a curved, radially inner surface** and each end flange includes a plurality of spaced-apart, radial flange elements;
bending the U-shaped channel; and
connecting ends of the U-shaped channel with each other in a position so the curved, radially inner surface of each cylinder element abuts against two adjacent cylinder elements to form an inner circumference of a cylinder.

14. A bobbin of plastic comprising:
a one piece injection moulded U-shaped channel,
wherein **the U-shaped channel includes a plurality of cylinder elements each having a curved radially inner surface at the time the U-shaped channel is injection moulded and prior to the U-shaped channel being bent to form a circumference of the cylinder, so that when the U-shaped channel is bent to form a cylinder, the curved**

radially inner surface of each cylinder element abuts against two adjacent cylinder elements to form an inner circumference of a cylinder.

The cited references of Balke and Orange describe bobbins or reels made of a flat piece of material, such as paper or fluted plastic, respectively, which are punched, folded, and thereafter bent to form a cylinder.

Accordingly, Applicant respectfully submits that neither Balke nor Orange, either alone or in any proper combination, disclose, teach, or suggest a “one piece injection moulded U-shaped channel,” as recited in independent claims 1 and 14 or a method of forming a bobbin that includes “injection-moulding a one piece U-shaped channel,” as recited in amended claim 8.”

The Examiner acknowledges this deficiency of both Balke and Orange on page 5, lines 4 and 5, but goes on to state “Zuk teaches that it is known to form a one-piece reel element made of plastic by means of injection molding because injection molding is a widely used manufacturing process appropriate for making plastic articles (col. 1, lines 34-67). Accordingly, it appears the Examiner is indicating that one of ordinary skill in the art would reading the cited portion of Zuk would be motivated to modify the teachings of Balke and Orange to injection mold a U-shaped channel instead of punching, folding and bending a flat piece of material as described in both Balke and Orange.

However, Applicant respectfully submit that it is abundantly clear from the cited portion of Zuk, which is reproduced below, that Zuk teaches away from using injection molding.

In the electronics industry, reels are commonly used to store electronic components disposed onto a gummed or compartmentalized carrier tape by pick and place machines. Prior art reels are typically plastic, manufactured through injection molding to accommodate a significant number of relatively small electronic components, and often suitable for use in a clean room. Electronics manufacturing is substantially automated due to the storage of electronic components on reels, since reels

provide an ideal storing method conducive to assembly line manufacturing where items can be stored in-line at equal intervals with identical orientations. Bulk shipments of components would require human intervention to arrange and orient the components in the assembly and manufacturing process, thereby incurring costs in time and money which are non-existent in a substantially or fully automated system.

Injection molded plastic reels, however, suffer from several drawbacks. First, inherent limitations in the injection molding process restrict the size of injection molded reels. To store relatively large electronic components, a reel is required with a relatively large hub and corresponding large flanges to efficiently accommodate a cost-effective number of stored items. Costs and technology of injection molding limit the size of a reel which can be manufactured by this process. **Second,** molds required for injection molding are relatively expensive, with such high costs limiting the number of reel designs. Also, the costs are unjustifiable in preparing a mold for a reel intended to accommodate a short-lived electronic component. **Third,** prior art reels basically comprise the same form with a cylindrical hub mounted between two planar, circular flanges. Electronic components having a substantial length may require storage in an unbent fashion and cannot be placed on a prior art reel which would conform the component to the hub's circumference and cause bending therein. **Fourth,** some prior art reels are formed so that, once assembled, either at the reel manufacturer or by the reel user, the reels cannot be readily disassembled. Thus, voluminous storage capacity is required to store assembled reels. **Fifth,** some prior art reels are not easily assembled, requiring gluing, riveting or ultrasonic welding. (emphasis added).

In light of the above five specifically identified problems associated with injection molding, Applicant respectfully submits that it is clear that Zuk teaches away from using injection molding.

Further, MPEP §2141.02 (VI), titled "PRIOR ART MUST BE CONSIDERED IN ITS ENTIRETY, INCLUDING DISCLOSURES THAT TEACH AWAY FROM THE CLAIMS" specifically states a "prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claim invention." Still further, MPEP §2145 (X)(D)(3) goes a step further and indicates that "[t]he totality of the prior art must be considered, and proceeding contrary to accepted wisdom in the art is evidence of nonobviousness."

In light of the above, Applicant respectfully submits that the Examiner's reliance on Zuk as providing motivation for one skilled in the art to modify the teachings of Balke and Orange to use injection molding is misplaced. In fact, Applicant respectfully submits that, if anything, Zuk provides evidence that the claimed invention is non-obvious.

Therefore, Applicant respectfully requests that the rejection of claims 1-6 and 8-14 under 35 U.S.C. §103(a) be withdrawn.

Claim 7 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Balke as modified by Orange and Zuk, and in further view of Koskelainen (U.S. Patent No. 6,021,974).

However, Koskelainen fails to correct the problems identified above with the Examiner's combination of Balke, Orange, and Zuk; and fails to cure the deficiencies of Balke, Orange, and Zuk as described above with respect to independent claim 1 from which claim 7 depends.

Accordingly, Applicant respectfully submits the dependent claim 7 is allowable for at least the same reasons as independent claim 1 and respectfully requests that the rejection of claim 7 be withdrawn.

Still further, Applicant respectfully submits that none of the cited references disclose, teach or suggest that "**the U-shaped channel includes a plurality of cylinder elements each having a curved, radially inner surface at the time the U-shaped channel is injection moulded and prior to the U-shaped channel being bent to form a circumference of the cylinder**", as recited in amended independent claim 14.

Accordingly, Applicant respectfully submits that new claims 15-20, which depend from independent claim 14 are also in condition for formal allowance.

CONCLUSION

Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of the pending claims in the present application is earnestly solicited.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) hereby petition(s) for a two (2) month extension of time for filing a reply to the outstanding Office Action and submit the required \$225 extension fee herewith.

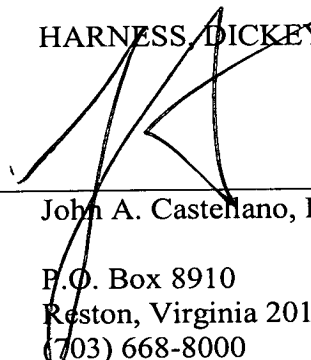
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John A. Castellano at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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By



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